

$$2. \quad a = 2.5 \frac{\text{m}}{\text{s}^2}$$

$$V_i = -4.0 \frac{\text{m}}{\text{s}}$$

$$t = 3.0 \text{ s}$$

$$V_f = 3.5 \frac{\text{m}}{\text{s}}$$

$$V_f = V_i + at$$

$$\frac{V_f - V_i}{t} = a$$

$$\frac{3.5 \frac{\text{m}}{\text{s}} - (-4.0 \frac{\text{m}}{\text{s}})}{3.0 \text{ s}} = a$$

$$\frac{7.5 \frac{\text{m}}{\text{s}}}{3.0 \text{ s}} = 2.5 \frac{\text{m}}{\text{s}^2} = a$$

$$b. a = 5.0 \frac{m}{s^2}$$

$$V_i = 2.0 \times 10^2 \frac{km}{h} \div 3.6 \Rightarrow 55.5 \frac{m}{s}$$

$$t = 8.0 s$$

$$d = ?$$

$$d = V_i t + \frac{1}{2} a t^2 \quad \leftarrow 1^{st}$$

$$d = (55.5 \frac{m}{s})(8.0 s) + \frac{1}{2} (5.0 \frac{m}{s^2})(8.0 s)^2$$

$$= 444 m + 160 m = 604 m = 6.0 \times 10^2 m$$